

Inquiry into the Renewable Energy (Electricity) Amendment Bill 2009 and a related bill
Renewable Energy (electricity) Amendment (Feed-In Tariff) Bill 2008-08-15

Committee Secretary
Senate Standing Committee on Economics
PO Box 6100
Parliament House
Canberra ACT 2600
Australia
Phone: +61 2 6277 3540
Fax: +61 2 6277 5719
Email: economics.sen@aph.gov.au

Submission from:

A handwritten signature in black ink, appearing to read "Adrian Ferraretto".

Adrian Ferraretto
Managing Director of Solar Shop Australia Pty Ltd
ABN: 65 092 562 877
155 Payneham Road
St Peters SA 5069
24th July 2009

Summary

Solar Shop Australia is a designer, supplier and installer of grid connect photovoltaic (PV) systems as well small wind turbines.

In 2008, Solar Shop Australia installed around one quarter of all photovoltaic solar electricity panels on Australia homes.

Solar Shop Australia has operations in Brisbane, Sydney, Melbourne, Adelaide, Canberra and Perth.

Solar Shop Australia now employs over 150 people directly as well as engaging numerous contractors on an ongoing basis.

Over the past eight years, Solar Shop Australia has had to endure uncertainty over the government support for the solar panel industry. The solar panel rebate formerly known as the Photovoltaic Rebate Program (PVRP) has undergone the following evolution:

- January 2000: PVRP introduced at \$5.5/W up to 1.5kW (\$8,250)
- July 2000: PVRP *REDUCED* to \$5/W up to 1.5kW (\$7,500)
- January 2003: PVRP *REDUCED* to zero as budget has run out
- May 2003: PVRP reintroduced at a *REDUCED* amount of \$4/W up to 1kW (\$4,000)
- May 2005: PVRP extended and maintained at \$4/W up to 1kW (\$4,000)
- May 2007: PVRP extended and *DOUBLED* to \$8/W up to 1kW (\$8,000) and promised for five years
- May 2008: A \$100,000 household means test plus a cap of 6,000 homes per year are introduced as well as the program being renamed to Solar Homes and Community Program
- June 2009: SHCP cancelled early with only eight hours of notice
- June 2009: Solar Credits Delayed – industry left in limbo.

Even the current \$8/W rebate with is heading way over its \$100m budget surrounding the PV industry with yet more uncertainty.

It's time for the PV solar industry to have long term certainty.

Photovoltaic Panel Rebate

Solar electricity is not cost competitive in Australia with fossil fuel sourced coal and gas thermal electricity.

However, it is estimated that by 2015, it will be cheaper to install panels on your roof instead of buying electricity from your utility. This is referred to in the photovoltaic (PV) industry as *grid parity*.

The Australian solar panel industry needs to prepare for grid parity so that when it arrives, we have a thriving indigenous Australian industry.

Australia used to be a powerhouse in the PV industry. In the early 1990, Australia used to install 8% of global panel. In 2008, we dropped to just one quarter of one percent of global installations.

Yet disproportionately, Australia is a massive 1% of global greenhouse gas emissions.

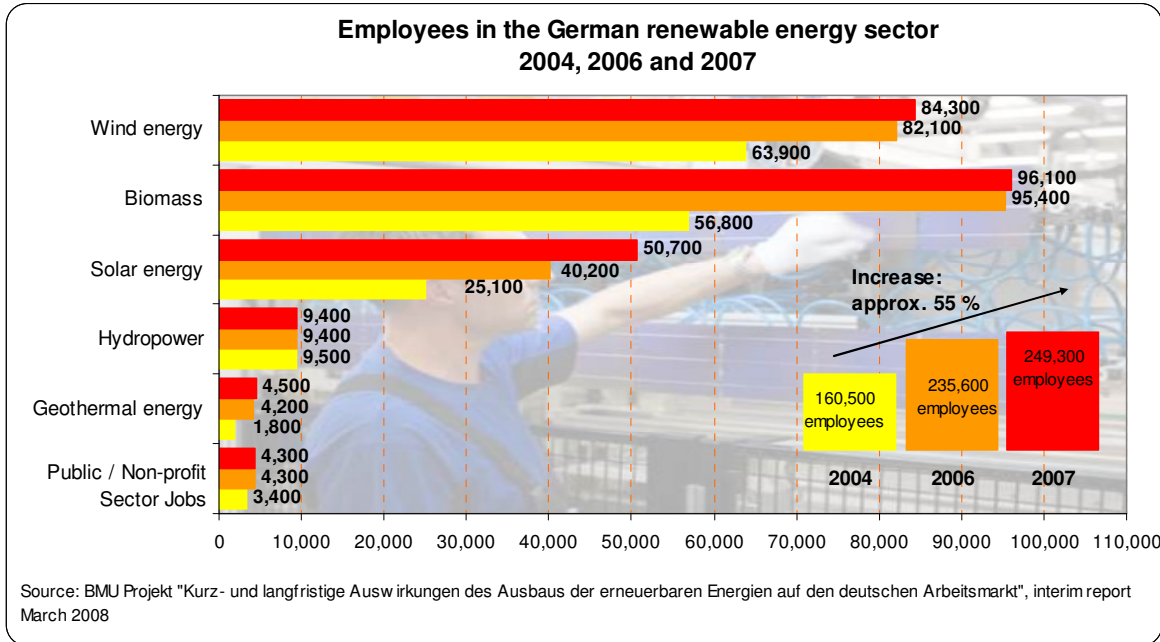
Australia needs excellent and stable PV policy to get us ready for grid parity.

The scheme needs to have long term certainty so that investors can have clarity and confidence in the industry and product. This will also encourage local manufacturing.

PV Job Creation

Germany is the most successful market in the world for installing solar panels. Around 50% of global PV installations was in Germany in 2006.

The number of PV employees in German in 2007, was 50,700.



PV gives more jobs per installed Watt compared with other renewable technologies.

PV installations produce around seven times as many jobs per installed MW, compared with wind power. PV installations are distributed and broad based compared with wind and hydro.

	MW Installed	Jobs Created	Jobs/MW
wind	39500	84300	2.1
biomass	19500	96100	4.9
solar	3500	50700	14.5
hydro	20700	9400	0.5

Source: BMU according to Working Group on Renewable Energies / Statistics (AGEE-Stat)

Suggestions for Solar Credits

The average PV installation size is 1.2kW which is around ¼ of the average installation size in Japan and Germany.

We need to lift the average system size in Australia to 4kW in line with the Australian average household's annual energy demand.

Solar Credits should apply the following multipliers:

	2009	2010	2011	2012	2013	2014	2015
0-1 kW	5	5	5	5	4	3	2
1-2 kW	4	4	4	4	3	2	1

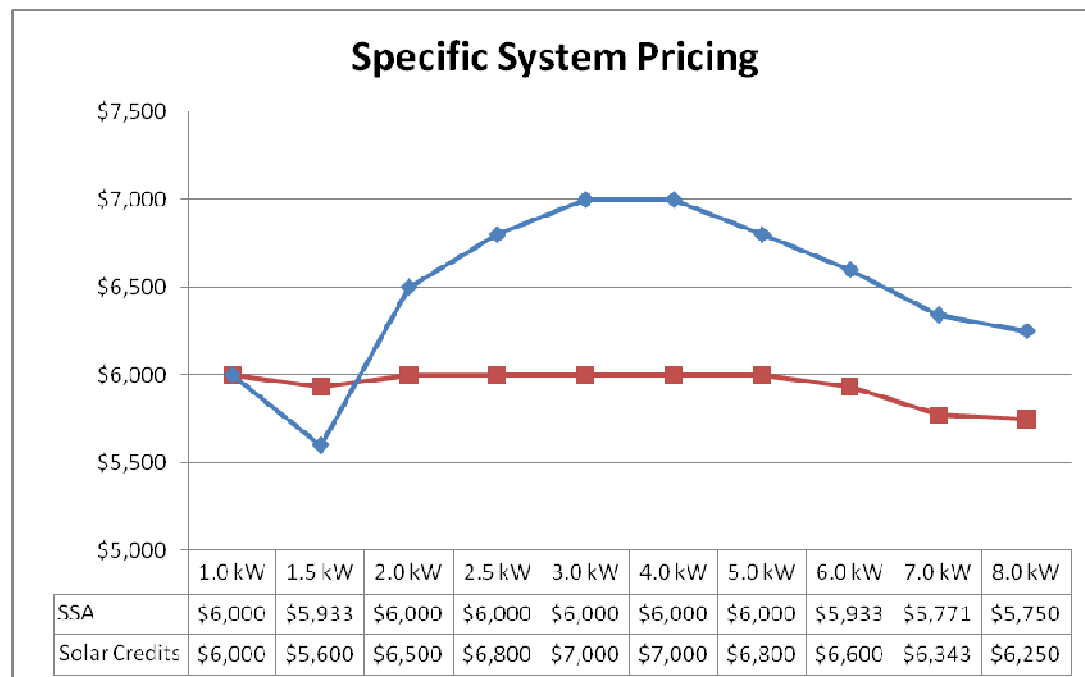
2-3 kW	3	3	3	3	2	1	1
3-4 kW	2	2	2	2	1	1	1
4-5 kW	1	1	1	1	1	1	1

e.g. Installing a 4kW system the first 1kW would attract 5x RECS Multiplier, the next kW (1 – 2kW) would attract 4 x Multiplier, the next kW (2kW – 3kW) would attract a 3 x Multiplier and the last kW (3 – 4kW) would attract a 2 x Multiplier.

Based on these multipliers, the approximate price of PV systems is shown below.

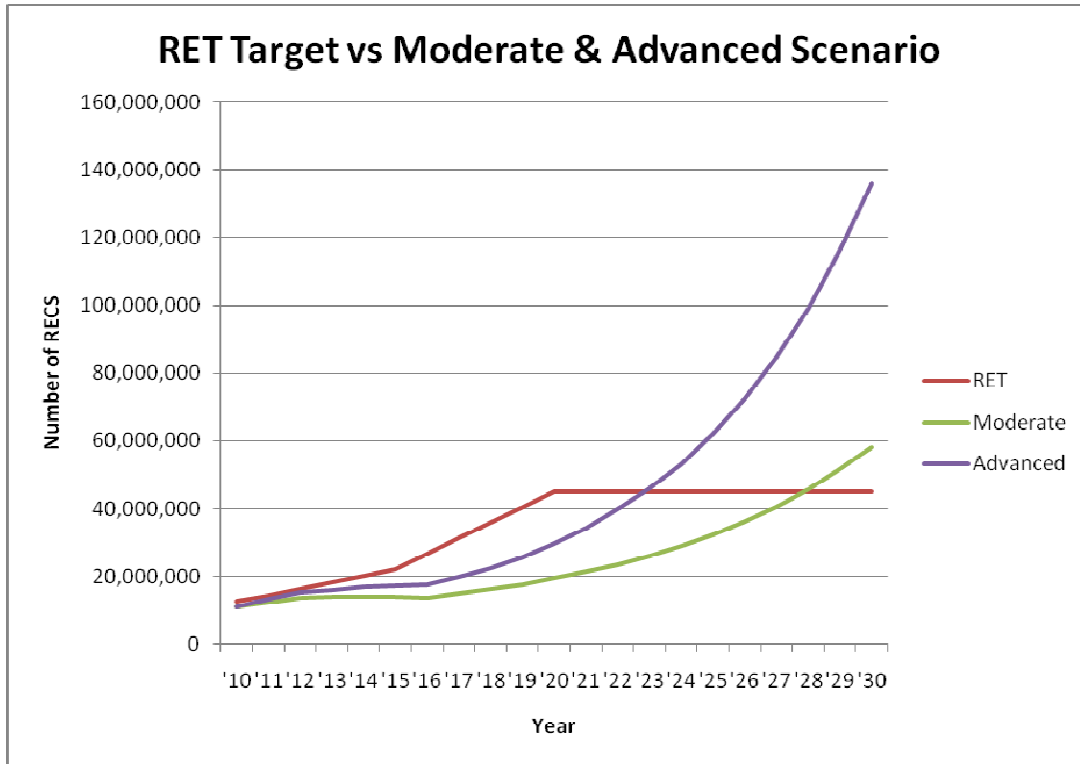
System Size	#RECS	Extnd @ \$50/REC	Gross System Price	Net System Price
1.0 kW	100	\$5,000	\$11,000	\$6,000
1.5 kW	140	\$7,000	\$15,900	\$8,900
2.0 kW	180	\$9,000	\$21,000	\$12,000
2.5 kW	210	\$10,500	\$25,500	\$15,000
3.0 kW	240	\$12,000	\$30,000	\$18,000
4.0 kW	280	\$14,000	\$38,000	\$24,000
5.0 kW	300	\$15,000	\$45,000	\$30,000
6.0 kW	320	\$16,000	\$51,600	\$35,600
7.0 kW	340	\$17,000	\$57,400	\$40,400
8.0 kW	360	\$18,000	\$64,000	\$46,000

Importantly, the specific price of the systems are less distorted the larger the solar system installation. The chart below compares the SSA model against the Solar Credits model. The SSA model is designed to encourage larger solar systems. The Solar Credits model penalises any system bigger than 1.5kW hence applying an artificial system size cap.



We have modelled effect of a Solar Credits RECS multiplier on the 45,000 GWh renewable energy target.

The table below shows the target to be appropriate if there are low levels of growth in various industries.





MODERATE SCENARIO

FY	PV Installations #1.5kW Systems		Solar Credits Multiplier	Number or RECS								TOTAL	RET Target	
	MW			Photovoltaic	Wind	Hydro	SHW	Wood Waste	Landfill Gas	Bagasse	Other		GWh	#RECS
2010	20,000	30.0	5	3,000,000	3,500,000	1,600,000	1,210,000	450,000	510,000	600,000	300,000	11,170,000	12,500	12,500,000
2011	24,000	36.0	5	3,600,000	3,850,000	1,600,000	1,331,000	450,000	510,000	600,000	300,000	12,241,000	14,400	14,400,000
2012	28,800	43.2	5	4,320,000	4,235,000	1,600,000	1,464,100	450,000	510,000	600,000	300,000	13,479,100	16,300	16,300,000
2013	34,560	51.8	4	4,147,200	4,658,500	1,600,000	1,610,510	450,000	510,000	600,000	300,000	13,876,210	18,200	18,200,000
2014	41,472	62.2	3	3,732,480	5,124,350	1,600,000	1,771,561	450,000	510,000	600,000	300,000	14,088,391	20,100	20,100,000
2015	49,766	74.6	2	2,985,984	5,636,785	1,600,000	1,948,717	450,000	510,000	600,000	300,000	14,031,486	22,000	22,000,000
2016	59,720	89.6	1	1,791,590	6,200,464	1,600,000	2,143,589	450,000	510,000	600,000	300,000	13,595,643	26,600	26,600,000
2017	71,664	107.5	1	2,149,908	6,820,510	1,600,000	2,357,948	450,000	510,000	600,000	300,000	14,788,366	31,200	31,200,000
2018	85,996	129.0	1	2,579,890	7,502,561	1,600,000	2,593,742	450,000	510,000	600,000	300,000	16,136,193	35,800	35,800,000
2019	103,196	154.8	1	3,095,868	8,252,817	1,600,000	2,853,117	450,000	510,000	600,000	300,000	17,661,802	40,400	40,400,000
2020	123,835	185.8	1	3,715,042	9,078,099	1,600,000	3,138,428	450,000	510,000	600,000	300,000	19,391,569	45,000	45,000,000
2021	148,602	222.9	1	4,458,050	9,985,908	1,600,000	3,452,271	450,000	510,000	600,000	300,000	21,356,230	45,000	45,000,000
2022	178,322	267.5	1	5,349,660	10,984,499	1,600,000	3,797,498	450,000	510,000	600,000	300,000	23,591,658	45,000	45,000,000
2023	213,986	321.0	1	6,419,592	12,082,949	1,600,000	4,177,248	450,000	510,000	600,000	300,000	26,139,790	45,000	45,000,000
2024	256,784	385.2	1	7,703,511	13,291,244	1,600,000	4,594,973	450,000	510,000	600,000	300,000	29,049,728	45,000	45,000,000
2025	308,140	462.2	1	9,244,213	14,620,369	1,600,000	5,054,470	450,000	510,000	600,000	300,000	32,379,052	45,000	45,000,000
2026	369,769	554.7	1	11,093,056	16,082,405	1,600,000	5,559,917	450,000	510,000	600,000	300,000	36,195,378	45,000	45,000,000
2027	443,722	665.6	1	13,311,667	17,690,646	1,600,000	6,115,909	450,000	510,000	600,000	300,000	40,578,222	45,000	45,000,000
2028	532,467	798.7	1	15,974,000	19,459,711	1,600,000	6,727,500	450,000	510,000	600,000	300,000	45,621,211	45,000	45,000,000
2029	638,960	958.4	1	19,168,800	21,405,682	1,600,000	7,400,250	450,000	510,000	600,000	300,000	51,434,732	45,000	45,000,000
2030	766,752	1150.1	1	23,002,560	23,546,250	1,600,000	8,140,275	450,000	510,000	600,000	300,000	58,149,085	45,000	45,000,000

ADVANCED SCENARIO

FY	PV Installations		Solar Credits Multiplier	Number or RECS								TOTAL	RET Target	
	#1.5kW Systems	MW		Photovoltaic	Wind	Hydro	SHW	Wood Waste	Landfill Gas	Bagasse	Other		GWh	#RECS
2010	20,000	30.0	5	3,000,000	3,500,000	1,600,000	1,210,000	450,000	510,000	600,000	300,000	11,170,000	12,500	12,500,000
2011	30,000	45.0	5	4,500,000	4,025,000	1,600,000	1,452,000	450,000	510,000	600,000	300,000	13,437,000	14,400	14,400,000
2012	36,000	54.0	5	5,400,000	4,628,750	1,600,000	1,742,400	450,000	510,000	600,000	300,000	15,231,150	16,300	16,300,000
2013	43,200	64.8	4	5,184,000	5,323,063	1,600,000	2,090,880	450,000	510,000	600,000	300,000	16,057,943	18,200	18,200,000
2014	51,840	77.8	3	4,665,600	6,121,522	1,600,000	2,509,056	450,000	510,000	600,000	300,000	16,756,178	20,100	20,100,000
2015	62,208	93.3	2	3,732,480	7,039,750	1,600,000	3,010,867	450,000	510,000	600,000	300,000	17,243,097	22,000	22,000,000
2016	74,650	112.0	1	2,239,488	8,095,713	1,600,000	3,613,041	450,000	510,000	600,000	300,000	17,408,241	26,600	26,600,000
2017	89,580	134.4	1	2,687,386	9,310,070	1,600,000	4,335,649	450,000	510,000	600,000	300,000	19,793,104	31,200	31,200,000
2018	107,495	161.2	1	3,224,863	10,706,580	1,600,000	5,202,779	450,000	510,000	600,000	300,000	22,594,221	35,800	35,800,000
2019	128,995	193.5	1	3,869,835	12,312,567	1,600,000	6,243,334	450,000	510,000	600,000	300,000	25,885,737	40,400	40,400,000
2020	154,793	232.2	1	4,643,802	14,159,452	1,600,000	7,492,001	450,000	510,000	600,000	300,000	29,755,255	45,000	45,000,000
2021	185,752	278.6	1	5,572,563	16,283,370	1,600,000	8,990,401	450,000	510,000	600,000	300,000	34,306,334	45,000	45,000,000
2022	222,903	334.4	1	6,687,075	18,725,875	1,600,000	10,788,482	450,000	510,000	600,000	300,000	39,661,432	45,000	45,000,000
2023	267,483	401.2	1	8,024,490	21,534,757	1,600,000	12,946,178	450,000	510,000	600,000	300,000	45,965,425	45,000	45,000,000
2024	320,980	481.5	1	9,629,388	24,764,970	1,600,000	15,535,413	450,000	510,000	600,000	300,000	53,389,772	45,000	45,000,000
2025	385,176	577.8	1	11,555,266	28,479,716	1,600,000	18,642,496	450,000	510,000	600,000	300,000	62,137,478	45,000	45,000,000
2026	462,211	693.3	1	13,866,319	32,751,673	1,600,000	22,370,995	450,000	510,000	600,000	300,000	72,448,988	45,000	45,000,000
2027	554,653	832.0	1	16,639,583	37,664,424	1,600,000	26,845,194	450,000	510,000	600,000	300,000	84,609,202	45,000	45,000,000
2028	665,583	998.4	1	19,967,500	43,314,088	1,600,000	32,214,233	450,000	510,000	600,000	300,000	98,955,821	45,000	45,000,000
2029	798,700	1198.0	1	23,961,000	49,811,201	1,600,000	38,657,080	450,000	510,000	600,000	300,000	115,889,281	45,000	45,000,000
2030	958,440	1437.7	1	28,753,200	57,282,881	1,600,000	46,388,496	450,000	510,000	600,000	300,000	135,884,577	45,000	45,000,000